B 588921

NINETY-SEVENTH YEAR

AMERICAN Gas Journal

APR 23 1956

APRIL 1956

Only Magazine Published Exclusively for the Gas Utility Industry

NEW

Parts Packaging Program

Before packaging, diaphragms are sealed in moisture-retaining envelopes.

...ator valve seats are nested in cardboard—then ...cted by corrugated sheets.

... comprising assemblies are packaged complete ...wn to the last screw.

A Rockwell Service That Saves You Time—Space—Money!

Now you can order most parts for Rockwell meters and regulators neatly packaged in convenient quantities. Each package is clearly labeled. Complete parts for many assemblies can also be obtained pre-sorted into easy-to-use packets.

These compact, carefully designed packages prevent damage to parts in shipment or deterioration in storage. They stack neatly on shelves—eliminate the need for space-wasting bins—simplify inventory control and re-ordering.

This packaging program is designed to save you time, space and money. It's just another way Rockwell offers better service and better values to the industry. Ask your Rockwell representative for full details.

ROCKWELL MANUFACTURING COMPANY

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Rockwell Meters and Regulators

FOR SPEED!
FOR ACCURACY!

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Pipe line companies find that Bell System private line teletypewriter service gives them the fast, written communications they need in today's competitive market.

These Bell System teletypewriters can be used for general communications and for dispatching and control between central point and remote locations.

You can have a direct connection between two or more teletypewriters—across the street or across the nation. Messages typed on one machine are instantly and accurately reproduced on the other. You get *direct—fast—accurate—written—private—two-way* record communications.

Let a Bell System communications engineer make a detailed study of your communications. Such a survey may save you time and money. There's no obligation.

• ***Call your Bell Telephone Business Office***

BELL TELEPHONE SYSTEM

TELEPHONE TELETYPEWRITER TELEMETERING AND REMOTE CONTROL CHANNELS

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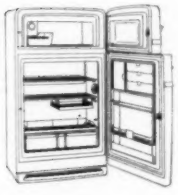
Here-a year ahead of time

Advanced new 1957 **Servel**

MODEL 1179-G

Now! The world's only gas refrigerator becomes the world's most automatic refrigerator! This powerful new selling combination will be boosting gas loads and profits for Utilities and Dealers coast-to-coast this year!

The amazing 1957 Servel outmodes, outdates, *obsoletes* every other refrigerator! Makes and serves ice cubes *automatically!* Defrosts *automatically!* Controls temperature *automatically!* Add powerful features like 10 year warranty on the refrigerating unit, silent dependable operation (out of the 4,000,000 Servels sold, 3,500,000 are still in use!) and you've still only *begun* to hint at the appeal of this big new beauty! It has...



- **Exciting color-balanced styling!**
- **"Air Conditioned" cold, no more dried-out foods!**
- **Adjustable roll-out shelves!**
- **Huge 70-lb. full-width deep cold freezer!**
- **Removable Serv-A-Tray for carrying foods from Servel to table!**
- **Removable trays for 3 dozen eggs!**
- **80 lbs. extra steel for extra quality!**

New Utility Dealer Support Plan Booms Gas Refrigerator Sales!

By offering Dealers Free installation, Free Service, No recourse financing, Gas Companies have had amazing success recruiting new Dealers, boosting refrigerator sales—and as a result, boosting their gas loads!

Pittsburgh has reported 414% sales increase, 35 new Dealers! Boston-Worcester has reported sales up 51%, 42 new Dealers! Dallas-Ft. Worth has reported a sales increase of 94% and 13 new Dealers!

It's a profitable plan for any Utility! Surveys show a gas refrigerator increases gas load profits up to 200% *per residential customer!* No wonder Gas Companies everywhere are adopting such a plan. Let us tell *you* about it!

The name to watch for great advances in REFRIGERATION AND AIR CONDITIONING

Servel

Servel boosts summer loads with both gas refrigeration and air conditioning

Servel Inc., Evansville 20, Ind. In Canada, Servel (Canada) Ltd., 548 King Street W., Toronto, Ont.

Ask Servel about the Sun Valley — the answer to your residential Gas cooling and heating problem.

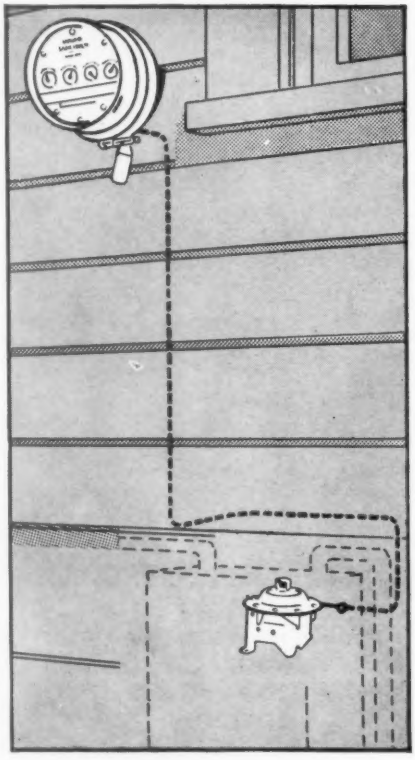
There's nothing like a tender, toothsome meterman to keep an alligator on his toes.

Gives him that body tone . . . puts more whip in his tail. In fact, independent surveys show that four out of every five domestically-housed alligators prefer meter readers over any other kind of snack including wild duck, stewed prunes and small children under five years old.

If your meter readers still have to go down into dark, unfamiliar cellars where there are always lots of surprises, you might pass the word along. Especially since, oddly, most health and accident policies don't cover this kind of a demise.

Of course, what you could do is arrange to have your meter readers get the reading outdoors. And you can do this by installing Sangamo Gas Telemeters on your present tin meters . . . brings the reading right outside the house. Be a lot of disappointed alligators—but then you can't please everybody nowadays.

We wrote everything down we thought you'd like to know about Telemeters and had it published under the title, "Outdoor meter reading is here . . ." or Bulletin 802. We've reserved a copy for you, so write for it today.



it's easier to get the reading ON THE OUTSIDE!

SANGAMO ELECTRIC COMPANY

SPRINGFIELD, ILLINOIS

GT56-2

memo: from the publisher

A common goal among utility companies from coast to coast, (border to border) is to improve the load factor, especially the summer load factor. A better load factor means more efficient and profitable operation.

In nearly every sector of the nation, the gas industry has been doing a marvelous job in selling gas for space heating.

It is disturbing, however, to note the inroads made by other forms of energy — namely electricity — into the kitchen, the laundry, and especially in the air-conditioning field.

In the May issued of AMERICAN GAS JOURNAL will appear reports on how gas air-conditioning is faring in the Southern Gas Association area, along with reports on how various utility companies in the SGA area conduct their sales programs, both direct and in cooperation with manufacturers and dealers.

Our research and editorial departments are busy compiling statistics, evaluating survey answers, studying results, and preparing these reports.

Taking a peek over their shoulders, we've noted trends that are both heartening and disturbing. A number of gas utilities actively pursuing courses designed to sell gas air conditioning are doing a tremendous job. There are still many companies that haven't been able to get the "wheels to move."

The 14-state area represented by the Southern Gas Association should be a first-rate market for gas air conditioning. Only a few companies, however, are going after this business wholeheartedly.

The availability of a number of new residential gas air conditioning units in all sizes this year should help improve this picture. The efficiency and economy of gas air conditioning has no peer. It can and should be sold enthusiastically.

Noted in our survey reply (from one large utility) was this candid observation: *The summer gas air conditioning load has been our biggest moneymaker.*

Everyone familiar with the air conditioning market sees a great future ahead. Gas utilities **can** get the lion's share — if they earnestly **want** the business and added summer load.

You'll be finding more and more about gas air conditioning in the pages of AGA in coming months. We believe it will become one of the greatest assets to our industry.

Joe B. Swoda

NINETY•SEVENTH YEAR

AMERICAN Gas Journal

APRIL, 1956

Only Magazine Published Exclusively for the Gas Utility Industry

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Engineering Editor
Ernestine Adams
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1011 South Madison, Pasadena 5, California
Donald M. Taylor
Gulf Coast Editor, JAckson 3-6346
2370 Rice Blvd., Room 236, Houston, Texas
Lewis V. Hohl
Eastern Representative, MUrray Hill 6-7232
52 Vanderbilt Ave., New York, New York
Leo T. Parker
Contributing Editor

Joe B. Woods
President and Publisher
Abbott Sparks
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NEW YORK— John Wallace
52 Vanderbilt Ave., MUrray Hill 6-7232
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DALLAS— Jess Adkins
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Advertising Service
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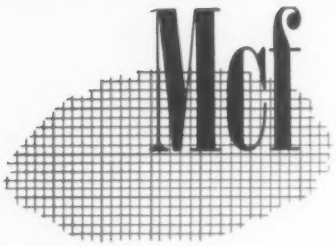


How much competition will the oil and gas industry face in atomic energy in the next few decades? Some, certainly, but the industry has northing to fear, according to a report of findings of a citizen's group to the Joint Committee of Congress on Atomic Energy. The committee said approximately 14 per cent of present U.S. natural gas output could be upgraded to domestic and other more remunerative uses, rather than being burned by electric utilities in power generation plants as is now done. The gas distribution industry, said the report, may even turn to atomic reactors for manufacture of artificial gas by gasification of coal in order to meet increasing demands for gas at economic prices. Space heating of ohmes by atomic power, said the committee, is far off and no concern for many decades.

THOUGHT FOR THE MONTH: Some folks are like the night owl—the more light you shine in his eyes, the blinder he gets.

People's Gas Light & Coke Company plans to appeal to the Illinois Supreme Court a recent ruling by a lower state circuit court upholding the validity of Chicago's 5 per cent tax on the company's gross receipts. Collections under the tax are being held in a special fund for return to consumers if the appeal proves successful. Interestingly enough, **especially the variance in rates,** Chicago's city council also enacted tax ordinances on two other utilities—Illinois Bell Telephone Company (for 2 per cent on gross receipts) and Commonwealth Edison (1 per cent on gross receipts). The taxes became effective last January 1.

An extra $10-billion for consumer spending for soft lines and home goods will be available this year, predicts Judson S. Sayre, president of the Norge Division of the Borg-Warner Corporation. Behind autos and homes, says Sayre, appliances stand as the third biggest consumer durable goods item, and with the sale of autos declining and home building slackening, the home goods industries should have a tremendous growth ahead this year. He called for better marketing practices of both manufacturers and distributors to achieve new sales goals in 1956.

Bills designed to halt or reduce the flow of natural gas across national borders have been introduced in both the House of Representatives and the Senate. Rep. Bailey (D., W. Va.) is proposing an excise tax of 10 cents per MCF on imported natural gas, which he feels appropriate inasmuch as all U. S. coal shipped to Canada is taxed at a rate of 50 cents per ton. Rep. Bailey is from a coal-producing state. A similar bill introduced in the senate by Sen. Watkins (R., Utah) would curb both import and export of natural gas if it would injure competing fuel industries in the U. S. The United Mine Workers is supporting both measures, which have little chance of passage this session.

Plans to keep natural gas reserves "at home" are being studied by a number of gas producers in the southwestern area where most of the nation's gas reserves are located. Phillips Petroleum Company is reportedly making available large quantities of its gas reserves in Texas for a proposed petrochemical manufacturing center near Houston. Phillips would supply raw materials, of which the chief item would be natural gas. The firm has an option for purchase on a 950-acre tract in the Houston Ship Channel industrial area. Other companies are also making efforts to attract industry to Texas and other states where they have large gas reserves. The result may be the building of a vast industrial empire in the Southwest.

Transcontinental Gas Pipe Line Corporation is planning to expand its system capacity this summer with a construction program that includes 160 miles of 36-in. and 68 miles of 30-in. loops on its system. Total expansion would be 105,000,000 cu ft daily, of which 80,000,000 would be available for the 1956-57 heating season. Greatest part of the increase would go to the New York-New Jersey market.

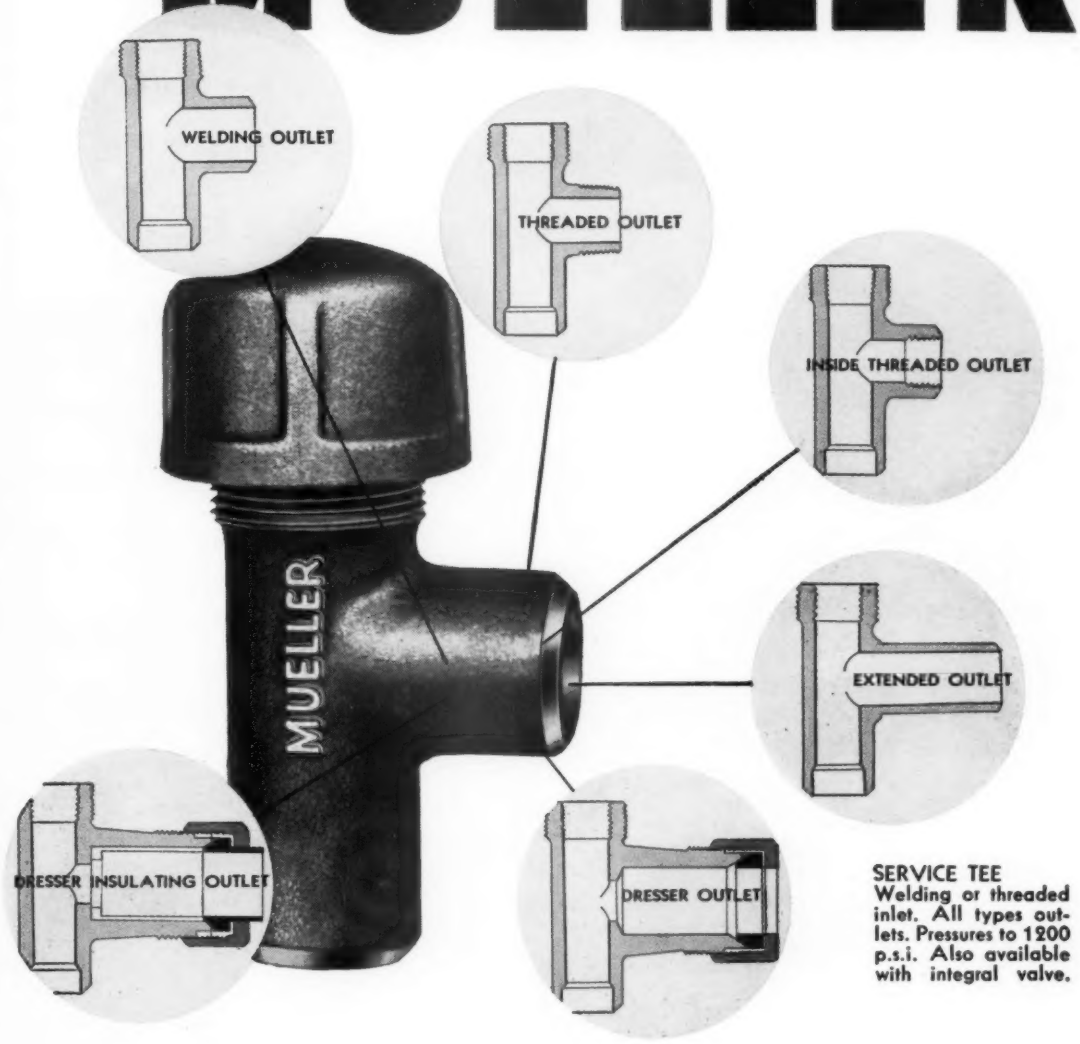
With practically all major markets in the U. S. opened to natural gas by the end of 1956, a somewhat slower rate of growth than that of the past few years may be ahead, predicts the March issue of PERSPECTIVE, published monthly by Calvin Bullock, a mutual fund management firm. The publication points out, however, that substantial expansion lies ahead in some markets, especially in those areas where suburban and rural population growth continues to concentrate, making feasible the extension of distribution services that cannot now be economically served.

Production of natural gas from Clinchfield Coal Corporation's properties in Virginia has begun with completion of Kentucky-West Virginia Gas Company's connecting pipe line to the field. Deliveries are being made under a 20-year contract to supply 12,500,000 cu ft daily at 26 cents per MCF. Clinchfield, which owns or leases 400,000 acres in southwest Virginia, has drilled 73 wells since 1948 and completed 63 as producers with aggregate daily open flow of over 92,000,000 cu ft. Further development is underway with 12 rigs working. Only a small portion has been explored to date, says the company.

Natural gas reserves, in the second greatest increase over a previous year of any year since 1945, reached a new peak of 223.7 trillion cu ft at the beginning of 1956. This is an increase of 12 trillion cu ft over reserves of 211.7 trillion cu ft as of January 1, 1955. Production of natural gas also reached a new high of 10.1 trillion cu ft, up 700 billion cu ft over 1954 withdrawals.

A compact, packaged, atom-fired boiler that will produce steam, heat, and hot water for industry may be only a few years away, says F. H. Klein, president of Orr & Sembower, Inc. Biggest problem at present is working out practical design details, and these are being overcome steadily. Such units would have high initial cost, but would have low fuel costs and lower piping and installation costs.

MUELLER



SERVICE TEE
Welding or threaded inlet. All types outlets. Pressures to 1200 p.s.i. Also available with integral valve.

SAFE CONNECTIONS at the main!

●Service lines may be added under pressure, without loss of gas, with Mueller welding or threaded inlet service tees.

The welding fitting is secured to the main and the service line completed to the first shut-off. A Mueller Drilling Machine mounts on the fitting, drills the main and activates the service in complete safety.

A Mueller "B" or "A-2" Tapping Machine may be used to install the threaded inlet tee under pressure. A deferred completion stopper retains gas until service line is completed to the first shut-off. Removal of the deferred completion plug activates the service without escape of gas.

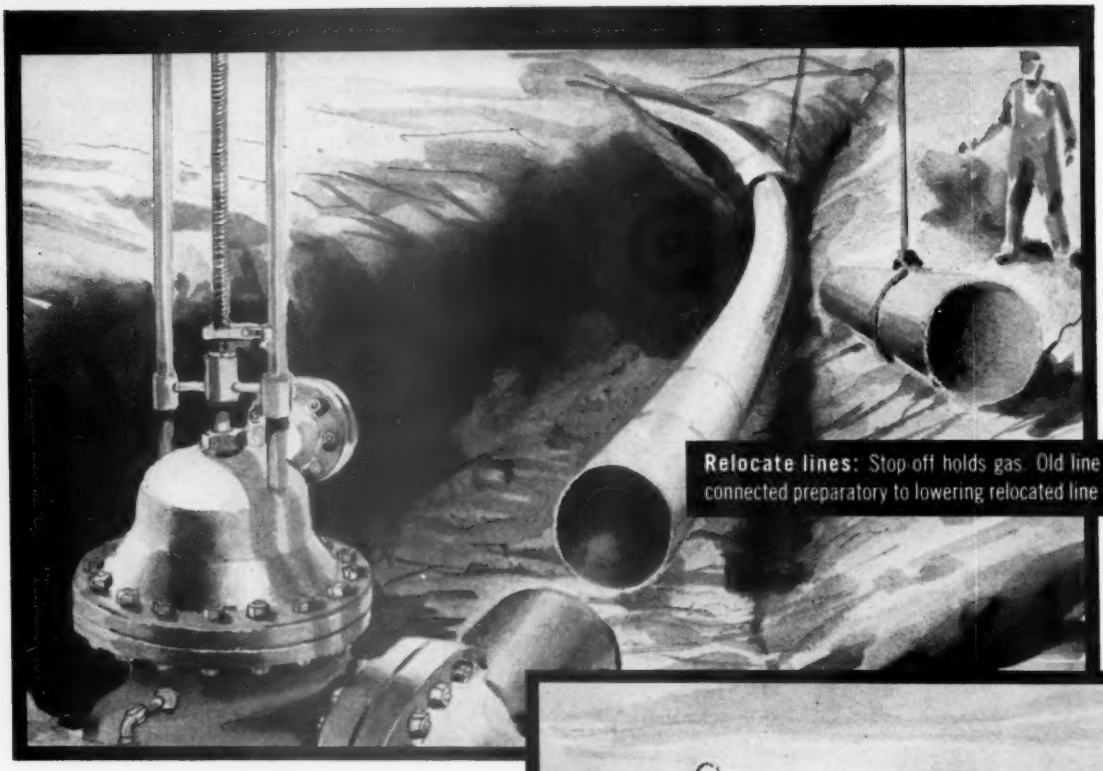
The welding and threaded inlet service tees are also available with an integral valve which gives positive shut-offs at the main. *Consult your Mueller Representative, Catalog G-97 or write direct for complete information.*

NO-BLO®

MUELLER CO.

Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS

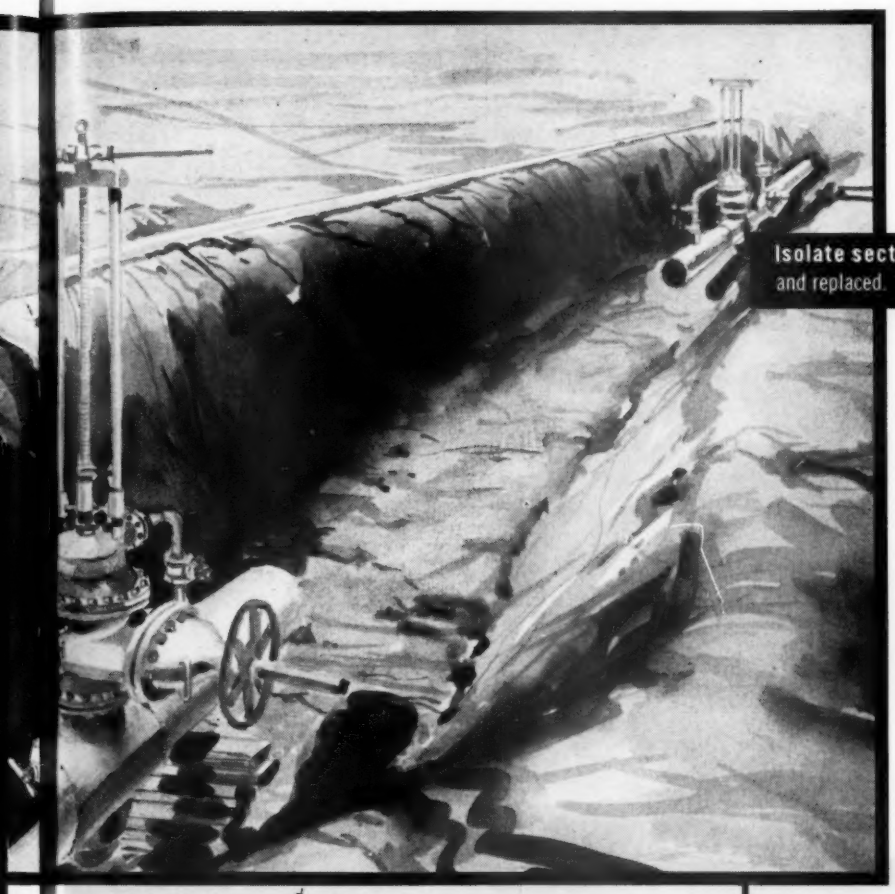


Relocate lines: Stop-off holds gas. Old line being disconnected preparatory to lowering relocated line into place.

Make tie-ins: Tightening steel wedge line stopper preparatory to making tie-in.

relocate lines
isolate sections
make tie-ins
under pressure!

If you are faced with any of these problems, you can make profitable use of Mueller Line Stopping Equipment. Fittings—in a complete range of sizes that fit service lines, laterals or mains from ¾" through 12"— are put in service under pressure, and without loss of gas, with related Stopping, Completion and Drilling Machines. Other services on the line need not be affected – a separate by-pass line can carry flow around the stop-off. If you have a limited amount of work to do on 10" and 12" lines, contact your Mueller Representative or write direct for information on rental service plan for No. 4 Line Stopper Unit.



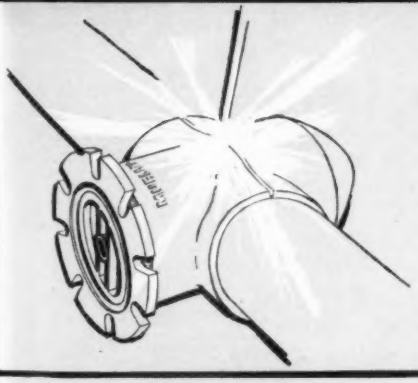
Isolate sections: Entire section being removed and replaced. Temporary by-pass carries the flow.

Write for the new No-Blo® Method Booklet, "Safe Operating Practice." It shows how other gas installations are made in a safe manner, without escape of gas.

MUELLER CO.

Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS



Step 1

Weld—Tack weld fitting halves together, position and weld to pipe. Leave completion plug in fitting (hand-tight) during welding. Allow to cool. Remove completion plug. Pressure test and attach gate valve to fitting.

Step 2

Cut—Attach the drilling machine and make cut entirely through the pipe. Retract boring bar, close valve and remove drilling machine.

Step 3

Stop-Off—Attach the stopper to inserting bar of the stopping machine and mount on the gate valve. Lower stopper into fitting and expand. Pipe is now stopped off and may be worked on safely.

Step 4

Complete—Relax and raise stopper; close valve and remove the machine. Attach completion plug to the inserting bar, mount machine, open valve and screw plug into fitting. Test. Remove machine and gate valve. Tighten plug and cap fitting.

MUELLER® NO-BLO® Method

Cleveland "Baby Digger" averages 3,500′ of 22″ x 36″ utility trench daily, digging in clay and rock

Good daily trench footage for utilities lines serving the new homes of the Belshire Subdivision in Nashville, Tenn. was produced by this Cleveland "Baby Digger." The outstanding dependability of the Cleveland for day-long digging, day after day, enabled it to average 3,500 feet per day, cutting 4 miles of trench 22 inches wide by 36 inches deep, in a subsoil of clay with considerable rock content. The Cleveland's complete operator visibility and efficient control grouping were also definite advantages in accurately cutting trench in the curving roadways. Just another example of performance that has made Clevelands the gas industry's choice in trenchers for over 30 years.

Talk it over with your Cleveland distributor

THE CLEVELAND TRENCHER COMPANY • 20100 St. Clair Ave. Cleveland 17, Ohio

CLEVELAND

PROMINENT PART of the two-day program was a symposium-type panorama presentation on the nation's gas industry. Symposium members, left to right, were Thomas Lee Robey, coordinator of research for AGA; Remick McDowell, chairman, AGA public information committee and vice president of People's Gas Light and Coke Company, Chicago; Willard F. Rockwell, Jr., president, GAMA and president of Rockwell Manufacturing Company; Dean H. Mitchell, president, AGA, and president, Northern Indiana Public Service Company; Frank H. Trembly, chairman, AGA, TV committee; Mrs. Richard Nourse of Quincy, Massachusetts, this year's Mrs. Massachusetts; Christy Payne, Jr., chairman, AGA general promotional planning committee and vice president of The Peoples Natural Gas Company, Pittsburgh; Harold Massey, managing director of GAMA; and William B. Hewson, vice president of Brooklyn Union Gas Company, master of ceremonies.

AGJ Pictorial Report

Sales, Industry Progress Highlight NEGA Meeting

Nearly 700 operating personnel, manufacturers, suppliers and dealers from the gas industry gathered in Boston on March 22-23 for the New England Gas Association's annual business conference to review the past year and make plans for greater accomplishments in the coming year. Emphasis of the meeting was on sales — of the quality of gas service to new customers and of newer and better gas appliances to both new and present customers. Better cooperation among utilities, suppliers, dealers, realtors, and architects was stressed at one panel session, while the importance of better group relationships, more popularly called "public relations" was thoroughly covered in another panel session. What the gas industry is doing to further its cause, through better and more hard-hitting advertising and promotion, improved appliances, public information, and many other means, was covered in a panoramic symposium presentation featuring the gas industry's leading men. The 1956 meeting heralded the 140th year of gas service in the northeastern part of the U. S.

NEW OFFICERS for New England Gas Association in 1956-57 are, front row, left to right, Fred H. Faulstich, incoming president (vice-president, Springfield Gas Light Company); Harold E. Ayer, retiring president, (executive vice president, Lynn Gas and Electric Company); Edgar G. Rhodes, 1st vice president (president and general manager, The New Britain Gas Light Company); back row, left to right, Andrew W. Johnston, 2nd vice president (vice president, gas operations, Boston Gas Company); Otto Price, treasurer (vice president, accounting, Boston Gas Company); H. Coleman Moore, Jr., assistant treasurer (vice president and treasurer, NEGEA Service Corporation); Clark Belden, clerk (managing director, The New England Gas Association).

PANEL MEMBERS WHO DISCUSSED "Building Desirable Group Relationships" included, left to right, Robert M. Brigham, assistant vice president, Springfield Gas Light Company; Charles E. Downing, public relations director, Eastern Gas and Fuel Associates; Virgil L. Rankin, public relations consultant, Boston; Paul V. Hayden (panel chairman), vice president, Connecticut Light and Power Company; Frederick Bowes, Jr., vice president for public relations and advertising, Pitney-Bowes, Inc.; and Richard P. Axten, director of public relations, Raytheon Manufacturing Company.

MEMBERS OF THE PANEL discussing "Cooperation With Industry Allies" were, left to right, C. A. Byron, residential sales manager, Connecticut Light and Power Company and chairman, NEGA residential sales division; Charles P. Pieper, president, Charles P. Pieper, Inc. (Metropolitan Boston Builder); Julius Klein, president, Caloric Appliance Corporation; Henry A. Kievenaar, (panel chairman), manager of residential sales, Boston Gas Company; R. L. Towne, executive director of Plumbing and Heating Wholesalers of New England, Inc.; and H. C. Gurney, sales manager, Janitrol Division, Surface Combustion Corporation.

Just the ticket for those INDUSTRIAL and COMMERCIAL jobs!

ACCURATE! VERSATILE! FOOLPROOF!

A compact self-contained economical regulator designed to satisfy 90% of your commercial and light industrial regulator requirements.

For distribution use, it steps up the pressure as the demand increases to deliver gas when you need it.

For safe accurate regulation of large volume commercial or industrial services, use Model 461 as a monitor regulator with Model '1100' as the control regulator. Most of the parts interchange. Both are compact, accurate and versatile.

Bulletin 461 gives complete information.

461-1-56

ACCURATE CP MFG CO. DEPENDABLE

Chaplin-Fulton

MANUFACTURING COMPANY

Pittsburgh 36, Pennsylvania

The Law:

Recent Decisions on Safety

By Leo T. Parker
Attorney at Law

$100,000 To Contractor's Employee

Considerable discussion has arisen from time to time over the legal question: If a contractor is performing work on a gas corporation's premises and one of the contractor's employees is injured is the gas corporation liable?

A higher court rendered an important decision to the effect that a corporation, which had on its premises high voltage power lines, is liable in $100,000 damages for burns received by an employee of a contractor who was doing repair and alteration work on the corporation's premises.

For illustration, in *Boehm v. Rivershoe Company, 282 Pac. (2d) 69*, the testimony showed facts, as follows: A corporation owns and operates a plant, and it made a contract with a contractor to make certain alterations and construction work on the plant and premises. The officials of the corporation knew that the contractor frequently used cranes with 60-ft booms in its work; they also knew that much of the contractor's work was done at night.

One night when an employee, named Boehm, of the contractor, was using a crane the latter came in contact with a three-wire power line carrying 33,000 volts for use by the corporation in its plant. Boehm was severely burned. In holding the corporation liable to Boehm for $100,000 damages, the higher court said:

"It was the duty of the defendant (corporation) to use ordinary care to furnish plaintiffs (Boehm) with a safe place to work. The general rule is that an owner of premises who permits a workman to come on the premises for the performance of work for the benefit of the owner, is required to use ordinary care to supply him with a reasonably safe place in which to work, and to warn him of any existing danger which he knew or, in the exercise of ordinary care, should have known."

Governmental vs Proprietary

A reader asks: *"What is the legal difference between governmental and proprietary functions which in some instances relieves a state, county or city from liability for injuries to private property, employees and citizens? I am quite certain that other readers will profit and appreciate knowing more about this law."*

First, it is important to know that all higher-courts agree that neither a state, county or city is immune to liability for negligence in the performance of a governmental function, but it is liable if it effects an injury while fulfilling a function of a proprietary character. Therefore, true definitions of the terms "governmental" and "proprietary" is necessary when determining the outcome of a suit for damages based for functions.

The higher courts hold: **A state, county or city performs governmental functions when it is engaged in the exercise of powers and in the performance of duties conferred and enjoined upon it for the public benefit.**

On the other hand, a state, county or city is engaged in proprietary functions when it does anything for a definite profit.

Therefore, the liability of states, cities, and towns for the negligence of their officers or agents depends upon the nature of the power that it is exercising when the damage complained of is sustained.

When officials of a state, county or city are acting in their ministerial or corporate character in the management of property for the corporation's own profit, or in the exercise of powers assumed voluntarily for its own advantage, it is impliedly liable for damage caused by the negligence of officers or agents, although they may be engaged in some work that will inure to the general benefit of the citizens of the state, county or municipality.

For example, the grading of streets, the cleaning of sewers, operation of fire departments, keeping in safe condition wharves, public parks, etc. from which it derives no profit are duties within the government classifications.

In *Beach, 225 N. C. 28, 33 S. E. (2d) 65*, the maintenance of street lights was held by the higher court to be a governmental function.

In *Broome v. City of Charlotte, 208 N. C. 729, 182 S. E. 325*, the higher court exempted the municipality for an injury on the ground that the operation of a truck for the collection of trash in street cleaning was a governmental function.

In *Williams v. Randolph Hospital, 75 S. E. (2d) 303*, it was held that a charitable hospital corporation, not operated for profit, was not liable to a paying patient for injuries received due to the negligence of the employees of the hospital.

Also, when a city or town is exercising the judicial, discretionary, or legislative authority conferred by its charter, or is discharging a duty imposed solely for the benefit of the public, it incurs no liability for the negligence of its officers, unless some statute subjects the corporation to pecuniary responsibility for such negligence.

Safe Working Place

The obligation of a gas company is to provide a "reasonably" safe place for employees to work.

For instance, in *Fisher v. Laclede Gas Company, 31 S. W. (2d) 770*, it was shown that a gas company's plant was being repaired. Tools and various materials were scattered over a floor and in picking his way through them an employee slipped and fell through an opening to the floor below. He was seriously injured and sued the gas company for damages.

In holding the injured employee entitled to recover $10,000 damages, the court said that it was a legal duty of the gas company to provide employees with reasonably safe working places.

Of course, the employee would have lost this suit, if the gas company had introduced testimony proving that the tools the employee stumbled over were his own tools that he had left on the floor. Under these circumstances the employee would have been contributory negligent and he could not have recovered damages for the injury. Also, if the testimony had shown that the floor was well illuminated or that the employee had known that the tools and materials were on the floor, the gas company would have won the suit.

Conveyor is shown at left, and another view of the elevator at right shows pipe being lifted into the building for processing and wrapping.

New PG&E Pipe Yard Handles 50,000 Feet of Pipe Daily

Jerry Stumm, *Western Editor*

WITH AN ANTICIPATED INCREASE IN population of 437,000 in California during 1956, Pacific Gas and Electric Company is leaving no stone unturned in gearing its gas facilities construction program to meet increased demands in northern and central California.

One new facility recently opened by PG and E is the Decoto Pipe Yard, capable of processing 50,000 ft of pipe per day, handling sizes ranging from ¾-in. service laterals up to 12¾-in. transmission lines, in all standard wall thicknesses.

The new plant, located on a 30-acre site in southern Alameda County, replaces the older pipe yards at Davis and Emeryville. The plant provides facilities for drying, grit blasting, enameling and wrapping pipe, with provisions for considerable future expansion. There is also a large area devoted to storage racks from which the processed pipe is immediately available for shipment as needed.

PG and E's vastly increased requirements for the immediate availability of ready-to-use pipe had far outgrown the facilities at Davis and Emeryville, that were put into service back in 1920. Also, the old yards were outdoor plants with virtually no protection to the pipe against weather.

The new yard provides fabricated steel buildings, covered with galvanized corrugated iron. The main building is 336-ft long and 140 ft wide. Lighting is furnished by a course of plastic sheets, corrugated to fit into the regular building corrugated siding and 500-watt, rough service lights, hanging from the ceiling, provide the artificial lighting requirements.

Receiving and Handling

Pipe is received by truck or rail at a siding constructed off a spur of the Southern Pacific Railroad Company, which extends the full length of the yard. The siding is paralleled by a heavy concrete craneway and pipe is unloaded from either the railroad cars or trucks by a 25-ton mobile crane.

Pipe is moved from the siding to one of a series of 11 timber skids mounted on heavy concrete blocks. These skids are set at a rolling grade of 9 in. per 100 ft, which facilitates moving the pipe to a cross conveyor in which dumb bell rollers move the pipe to the kick-off station. Here the pipe moves sideways on the elevator and into a 4 ft by 70 ft, 800,000 Btu per hour natural gas drying oven.

The pipe is dried on moving racks and delivered to the blast and priming line in three parallel lines of production.

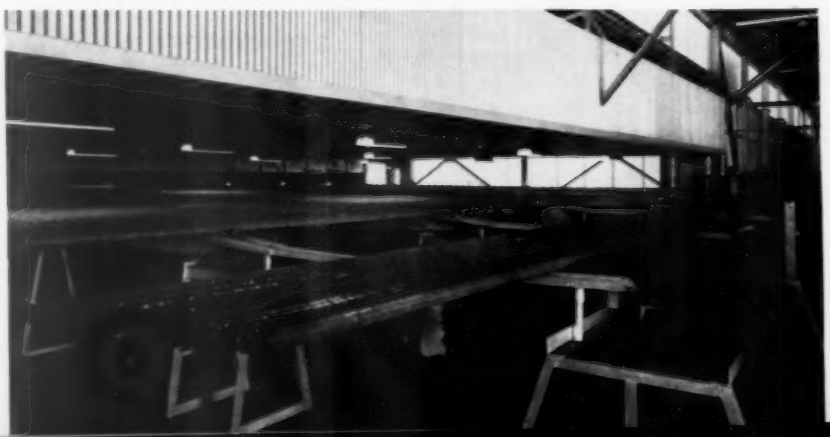
Steel and rubber angle wheels move the pipe quickly through the grit blaster and through the three spray gun equipped priming stations to the kick-off to the drying skids.

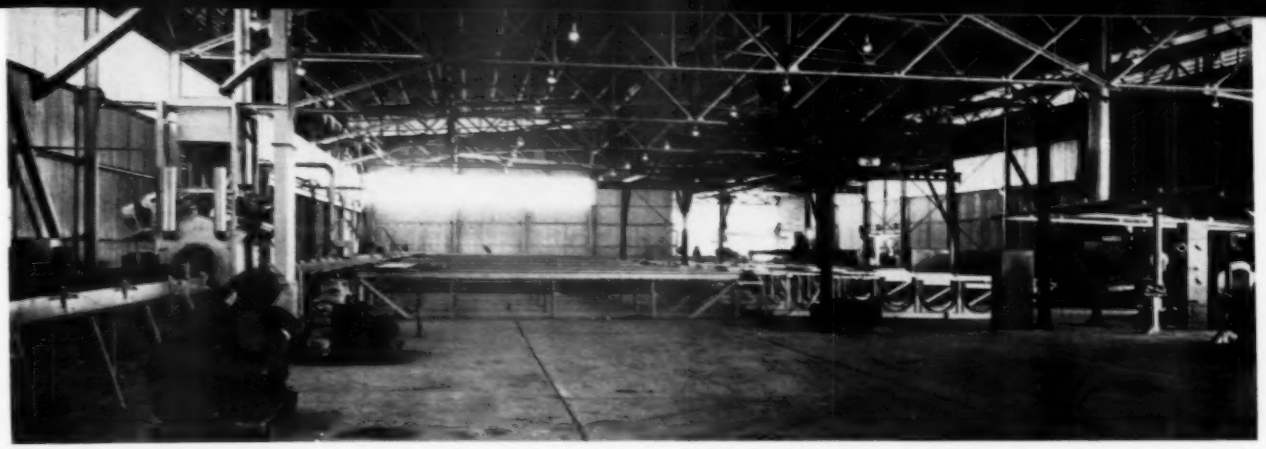
The pipe is allowed 30 minutes drying time on the moving chain skids and is delivered to the primed pipe storage skids at the incoming side of the wrapping machines.

Three parallel lines of production deliver a steady stream of pipe to each of three wrapping machines. After wrapping, the pipe is delivered to cooling tables that are set at slight rolling grades so that the pipe is easily delivered to the bundling jigs at the foot of the tables.

Conveyor belts are not used in any part of the operation. Dumb bell rollers are used for moving bare pipe,

Inside the building the pipe is carried through a drying oven by means of a chain conveyor into place for the start of its assemble-line treatment. It first goes on a roller-conveyor (at right) and then is carried into a grit blaster.





From the grit blaster (left) the pipe continues through a prime-coat machine and then is rolled on to a dryer on which a chain conveyor is synchronized with the blasting to permit drying of the primer. The pipe then goes directly to its final processing, or may be stored in the unfilled bins that can be seen below the right part of the tables.

while the blast line conveyor system use wheels set at an angle to the guided direction of the pipe. These wheels roll and advance the pipe simultaneously.

Bundling and Storing

The pipe is then grouped in standard, pyramidical, nestled bundles and bound with two 1¼-in. steel straps for delivery either to an outgoing truck or to storage in the coated pipe yard. In this yard bundles are stored, resting on the skids on the cut-backs on the ends of the pipe.

Two sets of racks are used, the bare pipe racks and the coated pipe racks. The bare pipe racks are built of 6 by 8-in. Douglas fir timbers, anchored on heavy concrete blocks at 4-ft spacing. The wearing surface of the skids is ¾-in. maple, fastened with stainless steel, flat head screws. The coated pipe storage racks are 6 by 8-in. timbers, on edge, mounted on 3 by 12 by 24-in. blocks.

A third type of storage, which is a feature of the plant, is the primed pipe storage bins. These bins are U-shaped structures, 42-in. center to center, in groups of five U's in line.

Three lines of these structures are used to store loose, ¾ and 2-in. pipe. Hinged rails are supplied across the mouth of each of the U's so that pipe may be moved along to empty bins as the bins are filled.

Ten bins are capable of holding 198,000 ft of ¾-in. pipe, 78,000 ft of 1¼-in. and 61,000 ft of 2-in. pipe. This represents the equivalent of about a week's run for two wrapping machines in the ¾-in. size.

Very little blocking is required on the storage racks as the grades are very gentle. Bundles are stored in the open yard and the racks are not protected in any way.

Two 16,000 lb fork lift trucks are used for handling the pipe between the bundling jigs and the coated pipe storage. Pipe bundles vary in weight as follows:

¾-in.	5258 lb
1¼-in.	5259 lb
2 -in.	7029 lb
3 -in.	7182 lb
4 -in.	6763 lb

The footage varies from 3234 ft for the ¾-in., 1722 ft for the 1¼-in., 1472 ft for 2-in., 798 ft for 3-in. and 630 ft for 4-in.

Blasting, Coating and Wrapping

Air is not used at Decoto for grit blasting, and is used only in the plant for controls, air motors, and spray painting. Centrifugal grit blasters are used and have proven to be simple to operate and very effective.

A continuous stream of grit is supplied to the center of a wheel, much like a closed pump impeller, running at 3200 rpm. The grit is thrown violently away from the wheel, and a slotted cylinder in the center of the wheel is adjustable to deliver various patterns.

The pipe is passed under the wheel, either in two parallel streams or in single lengths, and the pattern is adjusted to fit the pipe. The grit flying by the pipe is caught either on rubber protective mats, or on hard steel wearing plates.

All dust is sucked out of the grit and is delivered into the baghouse where it is collected in large drums and delivered to an elevator which returns it to the wheel.

Size G-18 industrial grit is used and consumed at the rate of about 400 lb per day. The grit itself is reduced to dust, and this dust along with rust and pipe scale amounts to about 125-gal per week.

Five kettles are used to supply the hot asphalt enamel, and they are operated manually by observing indicating thermometers.

All pipe is double wrapped. The 2-in. and smaller pipe is first primed, then flooded with asphalt, then wrapped with felt, then coated with asphalt, then wrapped with felt again, then another coat of asphalt, and finally given a wrap of Kraft paper. The 3-in. and larger pipe is primed, flooded with asphalt, wrapped with 13-lb felt, flooded with asphalt, wrapped with 20-lb felt, and finally coated with whitewash.

This new project was instigated after a survey revealed that there was no other adequate facility in the area and, further, that the company could do the job more economically in one central location. While complete cost figures are not yet available, direct operating costs indicate the overall cost to be considerably less than at the former plants.

* * *

The pipe is wrapped with two layers of asphalt-covered felt and a cover-coat of paper. Sizes from ¾-in. to 12-in. are being handled presently at Decoto. Larger diameters will be later.

With the pond full of water, it was a simple matter to pull the floating "Bunker C" upstream.

Gas Men's Ingenuity Pays Off In Moving "Displaced Tank"

William P. Earley
Engineer, Worcester Gas Light Company

Worcester Gas Light Company solved the problem of moving tank back to a firm foundation with "vest-pocket" engineering

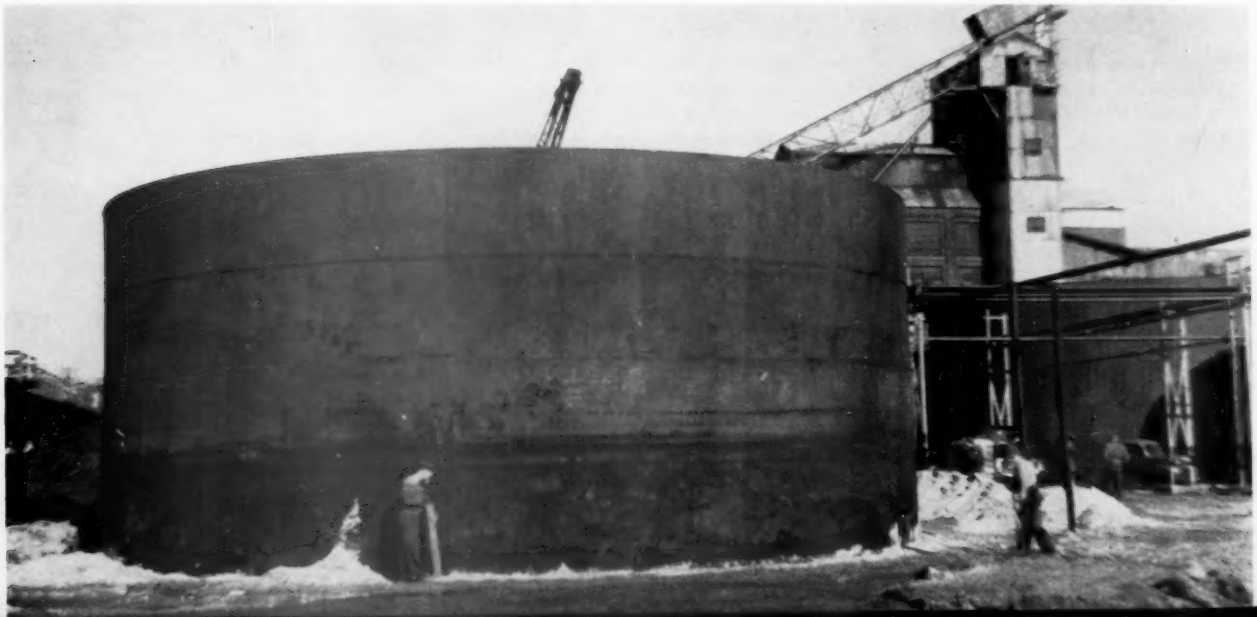
As a result of the rainy season, Worcester Gas Light Company was compelled to fight water with water to reestablish a quarter-million gallon oil storage tank on a firm foundation by using the same principal that Mother Nature used to displace the tank during the October floods.

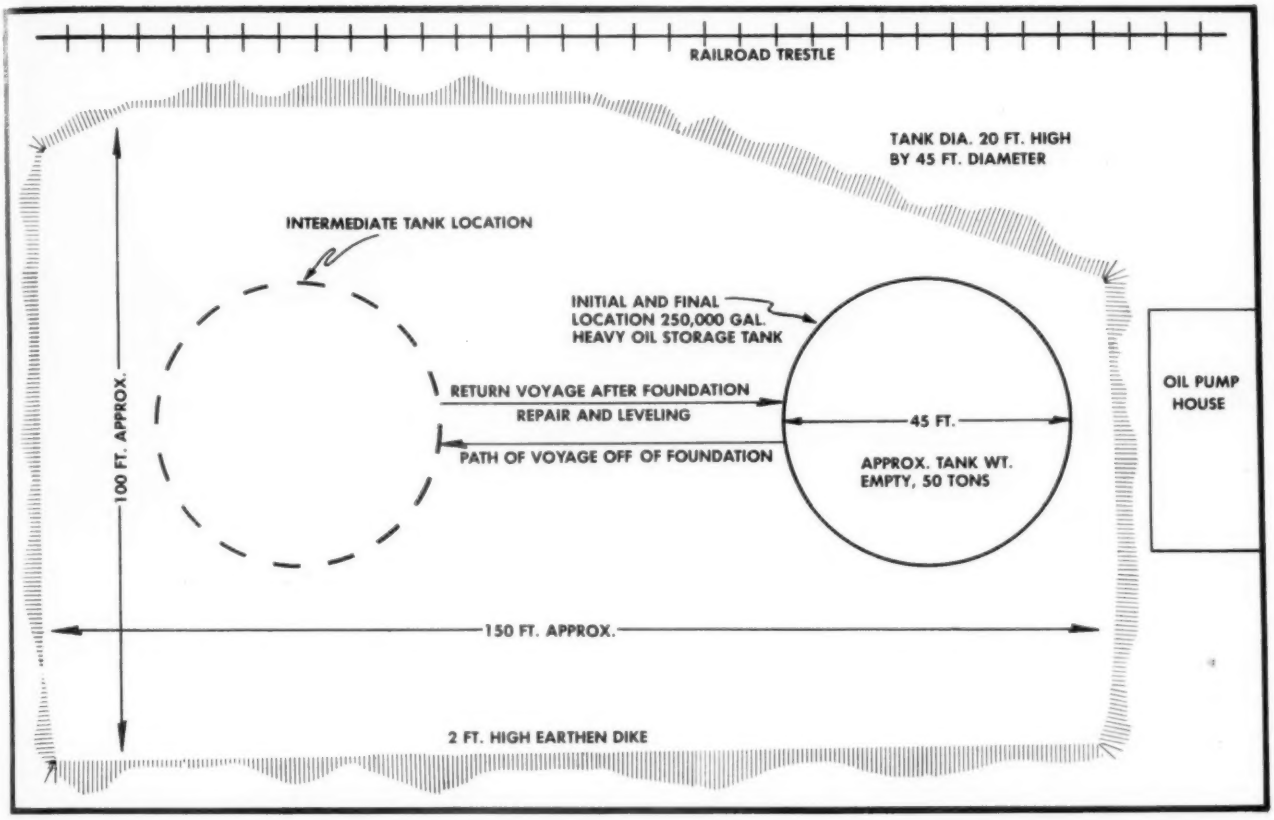
Buried four feet in the earth on a sunken foundation, the empty steel tank had previously withstood the bouyant force of six feet of water which surrounded it during the August flood. Close on the heels of the disastrous rains, however, a mere 12-in. rise in the ground water table that accompanied the October 19 deluge, caused the tank to move and to heave unevenly upward for two feet, coming to rest with an awkward and decided list to the South.

First efforts of the production department personnel were to sink the tank back onto its foundations by filling it with water. True to form, the balky tank refused to settle evenly, hanging up on one side, while setting firmly on the other. The net effect was to increase the degree of the list.

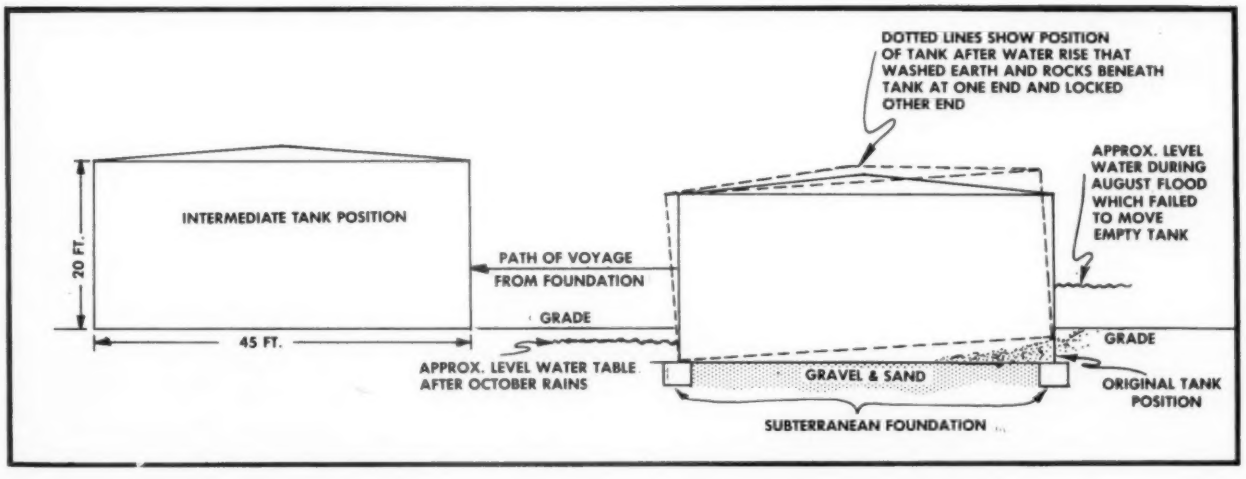
Subsequently, major and drastic operations that involved excavation, blocking and jacking up of the tank were dis-

High and dry the "Bunker C" is firmly replanted using the same hydraulic method that lifted her initially.





How Tank Was Moved is shown in the diagrams above and below, giving top and side views of procedure used.



cussed; the success of such operations being dubious at best due to the 100,000 lb weight of the tank and it's basically fragile structure. It was estimated that chances were 10 to 1 in favor of collapsing the tank!

It was reasoned that if 12-in. of water could lift her, why not build a dike of a foot or more . . . and float the tank up and aside? Then regain the foundation and float her back onto it.

In rapid sequence a dike or dam was built, water was introduced, a "pond" took shape . . . and at the predicted level, the squat and unlovely "vessel" bobbed lightly to the surface.

To move her aside proved simple. Even the smallest efforts using cables proved effective. Once located above level ground and adjacent to the foundation, the "plug" was pulled, the pond emptied and work began on foundation repair.

After completion of this phase, reseating the tank was accomplished by filling up the pond again and floating the "Bunker C" back into position.

This hydraulic method proved so successful, it has been proposed to use the method in improving tank locations in the oil storage farm of Worcester Gas Light Company at Framingham, Massachusetts. ★ ★ ★

Fifth of a Series

Communication:

How Is Your Telephone Personality?

Dr. Dennis Murphy

AFTER Alexander Graham Bell sent the first sentence over an electric wire on March 10, 1876, some means of intercommunications was needed. So, the world's first switchboard was opened two years later in New Haven, Connecticut. It was operated by a boy; in fact, young men operated all of the early switchboards in other towns. But these boys were often rowdy, impolite, and indifferent; therefore, the first woman operator was hired in 1879. With her began our traditional "voice with a smile" — a voice that means courteous and friendly service.

Today, the Bell System, with a score of subsidiaries, provides foreign and nation-wide telephone service. Each day it takes care of about 200,000,000 calls by means of 52,000,000 telephones and 650,000 employees who are courteous. Top men in this company, too, insist on answering their telephones when they can.

Your Telephone Manners Reflect You

Are the telephone answers in your company building better public relations? Are they a good advertisement for your firm? In New York alone over 1500 manufacturers, hotels, banks, and stores, employ skilled advisors who "listen in" on regular calls. These experts overhaul the telephone habits of employees who bang receivers, speak curtly, transfer calls impolitely, carry on side-conversation during a call, and drive many customers away with bad manners. Thoughtlessly they hurt business.

Making sales appointments that get through to the prospective buyer requires telephone tact. And making a friendly ally of the secretary or the receptionist to a top executive always helps; indeed, no salesman can afford to scold, arouse suspicion, or ride roughshod over anyone. Honestly asking for her help and "dropping your problem into the secretary's lap" is a far better technique.

Shakespeare had Hamlet advise his court players this way: "Speak the speech, I pray you, as I pronounced it to you, trippingly on the tongue." He wanted each word so clear and distinct that neither his uncle nor his mother could possibly misunderstand a syllable. And since the telephone isn't a high-fidelity instrument, **Smith** may sound like **Fish** — if you slur or chew or mumble your words. Or rattle off words too rapidly.

Six Tips That May Help

Each telephone voice leaves two impressions: one of the person speaking and one of the company represented. **What you say** and **how you say it** are highly important in creating good will toward your company and in building your own reputation as an employee. Each company may have telephone policies of its own. So ask your supervisor about policies for your department.

I. Answer the Telephone Promptly, Talk Clearly, and Always Be Courteous

Put a friendly smile in your voice! Attitude toward your work shows up in your voice. A good telephone voice is low-pitched, pleasingly confident, cordial, and — alive! Nothing sounds worse than the dead-pan voice of an uninterested employee. Nasality and mannerisms are taboo.

Speak close to the mouthpiece in your natural voice. Enunciate clearly. If you're in a conversation when the telephone rings, ask to be excused and do not go on talking after you lift the receiver.

Be prepared. Keep a pad, pencil, and data frequently used close at hand so you won't have to dig them up during a conversation. Keep a list of numbers frequently called. Long-distance calls take twice as much time when you don't furnish the number.

II. Identify Your Company, Your Department, Your Boss, or Yourself Immediately

In a small firm with no switchboard, identify your company first. In a company with a switchboard and many departments, you have a choice:

New! The Sherman Major Power Digger

with Many Advanced Features to Increase Versatility and Earning Power

The all new Sherman Major Power Digger has been engineered to take full advantage of the ruggedness and economy of the Fordson Major Diesel Tractor. This heavy-duty unit will dig 12 feet below grade, reach 18 feet 3 inches behind the tractor rear axle, dig throughout a swing arc of 180° and will carry a full bucket to a height of 8 feet 8 inches for loading trucks.

Additional features of the new Sherman Major Power Digger include twin crowd cylinders, heavy steel plate construction, large diameter hinge pins, heavy steel castings, replaceable hardened steel bearings at hinge points, and a newly designed dipstick, boom, cylinders, bucket and sub-frame assembly.

Write for bulletin No. 3141.

See the Sherman Major Power Digger soon at your local **FORD TRACTOR DEALER**

Sherman
PRODUCTS, INC.
ROYAL OAK, MICHIGAN
POWER DIGGERS* • FRONT END LOADERS • FORK LIFTS
Sherman SP Products

*Designed, Engineered and Manufactured jointly by Sherman Products, Inc., Royal Oak, Michigan. Wain-Roy Corporation, Hubbardston, Mass.

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"This is the Traffic Department." or "This is Mr. Black's office."

"Traffic Department, Jack Young speaking," Most men drop the use of **Mr.**

"Traffic, Mary Brown speaking," or "Traffic Department, Miss Brown speaking."

"Traffic, Young." This shortest form, if spoken with care, saves time.

Some consider the word **speaking** redundant, but it means **representing** and is necessary with some names.

DON'T CARRY ON A PRIVATE CONVERSATION LONGER THAN THREE MINUTES ON YOUR BUSINESS TELEPHONE — or you may block, delay, or lose business.

Avoid **Hello, Yeah, Yep, Un-huh** (yes), **Unh-unh** (no), **Hi-ya, all righty,** and other chummy but unbusinesslike words. Degree of acquaintance rules here.

III. Tactfully Try to Find Out Who Is Calling, Unless You Are Instructed Not To

This requires grace. Right phrasing of words and inflection of voice will usually get a willing answer. Polite persons identify themseles at once.

Don't say —	**Say —**
Who's calling?	May I tell him who is calling, please?
Who is this?	Please may I take a message for him?
What's your name?	Do you wish to leave any message?
Who are you anyway?	Would you like to have him call you, sir?

IV. Use Tact in Giving Out Information About Your Employer and Your Work

The word **secretary** means "one who guards secret information of the boss." This involves neither deceit nor falsehood, but discretion and loyalty.

Don't say —	**Say —**
He hasn't arrived at the office yet.	He's not in the office just now, but may I help you?
He's never come back from lunch yet.	He's not in, but I'll be glad to take a message.
He's in the coffee lounge.	He just stepped out of the office.
He's calling Chicago on long distance.	He's busy right now. Or, He's on another phone at the moment.
He flew to Washington on Monday but won't be be back until tomorrow.	He's out of town, but will be in the office tomorrow. May I help you?
He and his wife drove to New Orleans.	He's out of town this week.
He went to the Elks' Dance and isn't able to attend anything today!	He has asked me to say it's impossible for him to attend the meeting today.

V. Try to Be Helpful Whenever You Can. Service Is Our Greatest Product!

Never make a caller wait indefinitely. Ask whether he prefers to hold the line, to leave a message, or to call (or be called) later. If your boss is out of the office, ask whether you should try to get in touch with him.

When you need to look up information that may require several minutes, tell what you are going to do. Ask for permission to call him back.

Never transfer a call that you can attend to rightfully. **Nobody likes to repeat his message over and over to several different persons before finding one who can attend to it.** And if you give him the run-around, he suspects both you and your company of inefficiency.

If you are unable to help, courteously say: "That is something Mr. Doe in our Accounting Department looks after. If you wish, I'll tell him about it, and I'm sure that he'll give it prompt attention."

If your company has a switchboard, ask if he would like for you to transfer his call to the proper person. Then do it quietly, gently.

Don't say, "Transfer this to Doe," but courteously say, "Please transfer Mr. Blank to Mr. Doe."

VI. Try to Make Telephone Communication Easy and Pleasant in Business

Try hard to let nothing upset you, fluster you, irritate you. Stay happy! Accentuate the positive; eliminate the negative. Don't say "He isn't in." Say "He's attending a meeting. May I have him call you when he returns?"

Let your guest say goodbye and leave before you close the telephone door. And never slam the door — replace your receiver gently. **Try to make your caller leave happy.** Yes, always keep that friendly smile in your voice.

If your organization is large, your telephone company may send one of its customer service advisors to meet with your employees and demonstrate the best techniques of telephoning.

* * *

Modernistic theme is carried out in the entrance to the new plant.

RG&E's "Operations Center" Has New, Efficient Home

New ranch-type building, better location, improved method of handling inter-departmental communications are features

Rochester Gas and Electric Company has moved its Operation Center into a new ranch home that will insure it ample "elbow room" for at least a couple of more generations.

The former Operations Center was located in the heart of downtown Rochester with no adequate parking facilities within several blocks and no place to grow. Working crews were also headquartered there and they spent as much time in traffic as they did at the working site as they moved out in the morning rush and back in the evening traffic.

Rochester, a growing city with Lake Ontario to the north, is fanning out to the south with every indication that the growth will continue. Two belt parkways — in planning or construction — will speed traffic around the city and the new Operation Center is located at a midpoint of the outer parkway. There is plenty of room for the new building, parking lots, spacious lawn and facilities for outdoor sports such as tennis, softball, etc.

The new location will save money in several ways. Travel time has been cut down by the use of the parkway. Job sites in the downtown area are quickly reached by circling the city to a point nearest the location and then cutting into town directly toward it. Much of the new construction is in the new residential areas which are around the city and these sites are reached without traveling in heavy traffic.

Efficiency has been built into the building as well as beauty. A new automatic switch Airtube system connects the stock records department on the second floor with various sections of the warehouse. The operations are divided into the gas service and electrical service; each working independently. The warehouse is also divided into several subdivisions within either group.

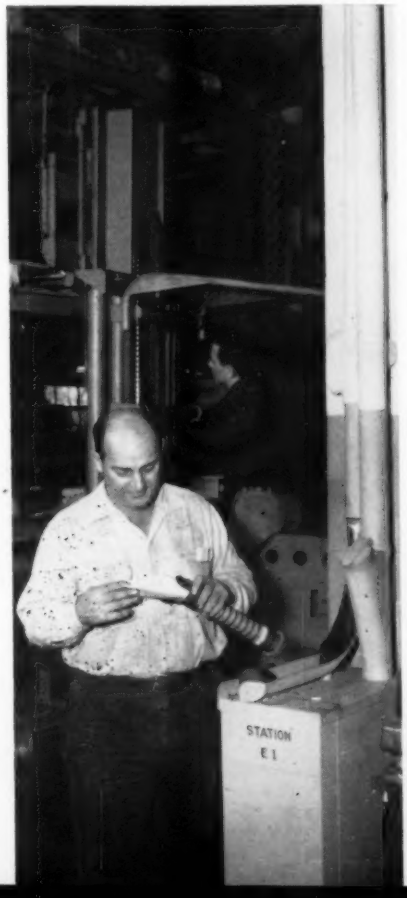
Material requisitions for repair orders are handled differently from those for new construction. The supervisor of a repair crew turns in a requisition for material in the afternoon for his requirements for the following day. The request is processed through the stock records department and sent to the particular section in the warehouse for filling. The order is picked up and placed on the truck so that the crew is ready to roll in the morning with no delays.

Materials for new construction are picked up and made ready for the crews on a schedule as they are required. A production control clerk receives a layout sketch from engineering and makes a bill of materials from which requisitions are written which are sent to the warehouse for filling as the construction progresses.

Incoming shipments and surplus materials are written up when they are received into the warehouse and a list is sent to stock records to be entered into inventory. A total of about 150 transactions a day are handled by the Airtube system. ★ ★ ★

Communications are speeded up by airtube system of dispatching requisition for materials to warehouse.

Materials order received — truck is loaded at night to speed up delivery for the morning crew.



Help Wanted

FOR A VITALLY IMPORTANT J

Twelve forward-looking manufacturers of equipment used by the gas industry are investing their money to help increase the sale of gas and of gas-burning appliances and equipment. These manufacturers know that as the gas industry goes, so goes their business.

The job that needs doing is too big for twelve manufacturers. Every supplier to the industry is invited to share in this business insurance program, under the direction of the Equipment Manufacturers' Advisory Committee of GAMA.

HOW YOU CAN BENEFIT

Mr. Supplier. Help insure your future earnings by investing in this program.

Mr. Utility. Make this program pay extra dividends for you by mailing proofs of these ads to your dealers and running these ads in your newspapers over your company name. FREE reprints and mats are available.

Published as a Service to the Gas Industry by

AMERICAN METER CO. EST. 1836 MEASUREMENT ENGINEERS

AMERICAN® METER COMPANY

INCORPORATED (ESTABLISHED 1836)

T JOB THAT NEEDS DOING

Gas GIVES YOU MORE FREE TIME
7 ways Gas makes your home modern as tomorrow
Gas
GAS is 7 ways better for the 7 big household services
OPERATION HOME IMPROVEMENT

National advertisements like these, designed to increase the sale of gas, are paid for by the following Suppliers to the Gas Industry.

A. C. Lawrence Leather Co.
American Cast Iron Pipe Co.
American Meter Co.
Cleveland Trencher Co.
Fisher Governor Co.
E. F. Griffiths Co.
U. S. Pipe & Foundry Co.
Mueller Company
Rockwell Manufacturing Co.
M. B. Skinner Co.
Sprague Meter Co.
Superior Meter Co.
Subsidiary of Neptune Meter Co.

Worker removes meter tops by holding meter against gas burner that melts soldered joints in about 18 seconds.

Gas burner with nine tips is swung down against valve box cover plate to melt soldered edges.

Brooklyn Union's

NEW TINNING MACHINE

Ups Production 1000 per cent

Robert G. White
President, R. G. White Manufacturing Corporation

. . . thorough job without excess solder is feature of process that automatically fluxes, tins and wipes meters

AN increase in production output of 1000 per cent lowered manpower requirements have been made possible by a new meter tinning machine installed at Brooklyn Union Gas Company's meter repair section. The machine automatically fluxes, tins and wipes 5-light and 10-light meter tops and cases at the rate of 500 per hour, as compared with the former manual rate of 50 an hour per man.

The machine has eliminated one of the more disagreeable tasks in the completely mechanized repair department that annually services more than 100,000 meters. By reducing tinning to a one-man operation, the machine has permitted the transfer of two workers to another section of the repair department.

Specific advantages of such a machine have long been realized by Brooklyn Union, but one could not be obtained commercially. Failing this, the utility turned the project over to a firm of custom-engineers that designs and constructs highly-specialized gas-fired equipment and machinery.

The Old Method

A comparison with the former manual methods points up the machine's effectiveness. Each worker faced a U-shaped trough filled with molten solder. After painting the edges of the case with flux he dipped one edge at a time into the rough. The edges then were wiped with waste cloth to remove the excess solder. It took at least 1¼ minutes to flux, tin and wipe each case.

The disadvantages of this procedure were manifold.

The wiping action invariably left a ridge of solder on the case that was not only unsightly but emphasized the fact that the meter was a repair.

The worker was continuously handling hot solder, and once his gloves were soaked with flux, there was the danger of personal injury through the gloves by penetration of heat.

Also, despite an excellent ventilating system at the work hood, a certain amount of smoke and heat was unavoidable in the operation, making it an unpleasant one.

All of these detriments have been eliminated by the new tinning machine.

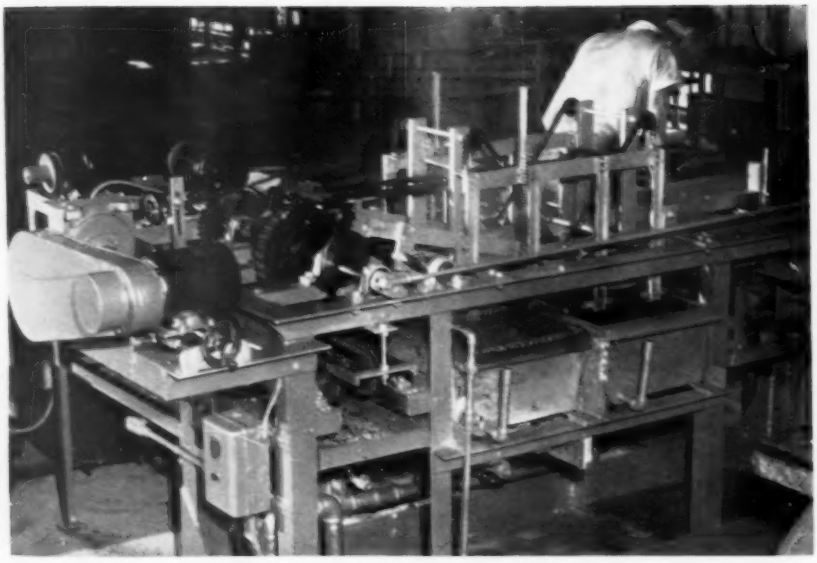
FEATURE
American Gas Journal

The New Method

All meters are brought into the department for repair after being in service not more than seven years. They are first sent through a ground floor washing machine on an overhead monorail conveyor. This machine sprays the meters with a straight caustic type liquid that scours the exterior surfaces to remove all dirt, grime and paint. From the washing machine the meters continue on the overhead conveyor to the third floor. Here a worker either places them in temporary storage or loads them on shop trucks for fourth floor dismantling and repair. The shop trucks hold 42 of the 5-light meters.

On the fourth floor the meters are opened on specially designed gas-fired burner opening machines, the first step being removal of the tops. A worker purges the meter interior with CO_2 to prevent the possibility of fire. He positions the meter against the burner.

Ribbon-type gas burners in this machine melt the solder that hold the cases to the meter. Forked prong for admission of CO_2 is at the worker's right.



A view of the back end of the tinning machine showing compactness of construction. Cast iron pot holding flux and solder can be seen at the right.

which melts the soldered joints in about 18 seconds. The tops are knocked off and dropped into a slot in the bench that leads to a storage box.

The meters are then pushed along the bench to another worker, who melts off the valve box cover plates by means of a gas burner with nine tips, which is swung down against the plate and quickly melts the solder.

Case Removal

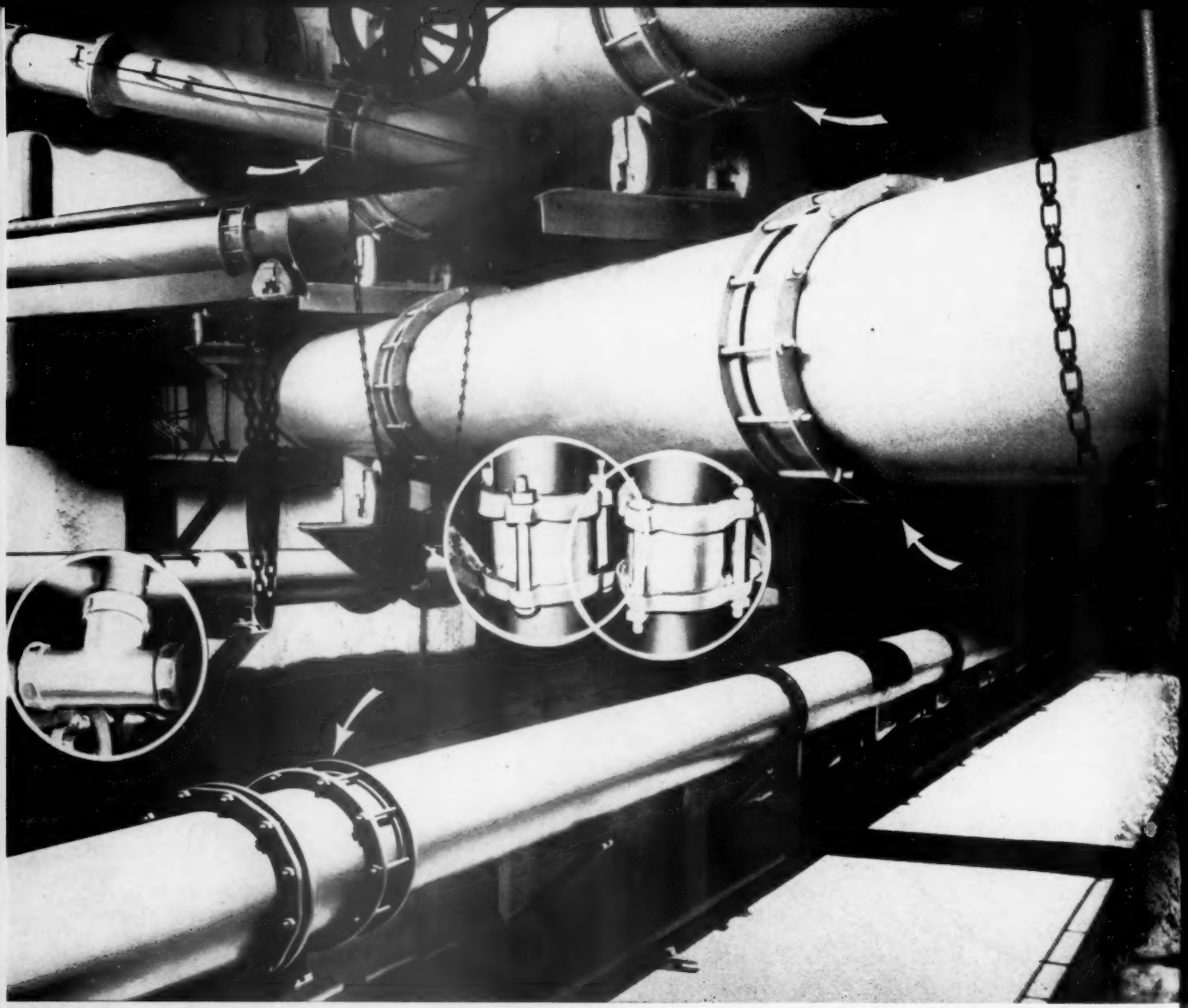
The meters then travel 8 ft on a gravity conveyor to the operator responsible for case removal. He inserts a forked prong into the valve ports of the meter to admit a blanket of CO_2 after the meter has been positioned in the case removing machine. The latter is actuated by compressed air and slides two rectangular ribbon-type gas burners into place on both sides of the meter. It takes approximately 21 seconds to melt the solder holding the cases to the meter and the operation is so effective that the cases practically fall off when the meter is removed.

When a sufficient quantity of tops and cases has been accumulated, they are placed in wire baskets and transported by hand truck to a caustic-type washing machine for degreasing. Each basket holds about 20 pieces and is fed into the washing machine by an overhead monorail conveyor. The washing solution consists of liquid caustic soda and water in a 1-to-8 ratio. The cases and tops are soaked in the tank for 15 minutes at 200 F and then pass on the same conveyor to a cold water spray rinse of 3 to 4 minute duration.

After drying, the tops and cases are hand-trucked to the tinning machine and are stacked in front of the operator who is required only to load the parts into the machine. Both 5-light and 10-light tops or cases can be fed into the machine interchangably by making a slight adjustment on a take-up wheel provided for that purpose.

In operation, the case is placed on a

Foreman Karmen Albert (above) displays 3 meter cases that have just emerged from the tinning machine. Note smooth surfaces that are free from excess solder. (Left) Fluxed, tinned and wiped cases drop to a chute which leads to the inclined conveyor at the extreme right.



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MAGNET COVE BARIUM CORP., Houston, Tex.—Magcobar and Magcogel drilling muds and other specialized oil well drilling fluids and chemicals.

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SECURITY ENGINEERING DIVISION, Dallas, Tex., Whittier, Calif. — Rock bits, reamer rock bits and hole openers; reamers, casing scrapers and Neo-Red rubber stabilizers.

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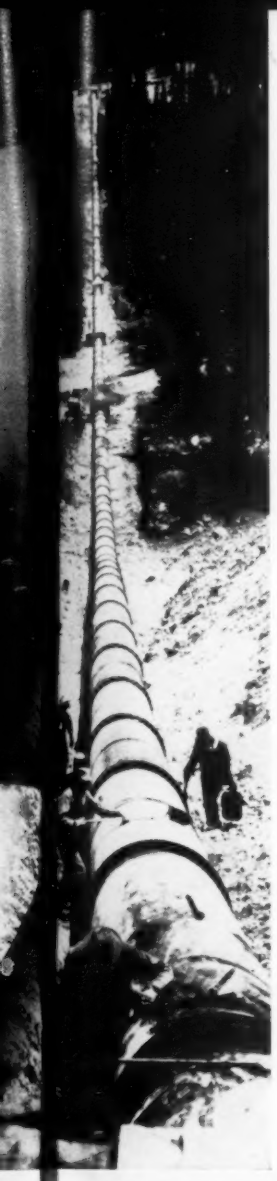

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loading table that rises several inches vertically. When the case has been positioned, the table halts momentarily at elevation to allow the case to be caught by a permanent magnet connected to the main conveyor chain. The case is then carried a short distance for preheating over a series of small gas burners.

Fluxing

The next step is fluxing, the flux itself being a water solution of zinc chloride. Here the case rests over the cast iron flux pot while a narrow ladle filled with liquid flux rises and immerses the four edges of the case simultaneously. Fluxing completed, the ladle lowers into the pot and the excess flux is allowed to drain off the case before it continues to the tinning stage.

Again the case remains stationary on the main conveyor while a ladle filled with hot liquid solder (50/50 tin and lead) rises out of the cast iron solder pot and thoroughly tins the edges. As the solder ladle lowers, the case drains off excess solder prior to being carried to the cross conveyors for wiping.

Ladles for fluxing and tinning are raised and lowered in synchronized flow with the rate of the main conveyor speed. Ladles dip down once for loading of flux and solder just prior to positioning of the case over each cast iron pot. Solder is liquefied by means of two gas burners directly beneath the pot. A drain in each pot facilitates removal of material when required.

After tinning, the two pusher arms on the first cross conveyor release the case from its magnet and carry it past burners and beneath two high-speed tampico brushes that wipe off the excess solder and polish the surfaces on two sides. Following this, the case is ejected onto a second cross conveyor and passes beneath another set of burners and brushes which duplicate the wiping and polishing action on the remaining two sides of the case.

At the end of this latter conveyor, the case is discharged to an inclined conveyor. On this last run the case is automatically cooled by a high pressure air blower which chills the solder so that the cases will not stick together as they stack up in a shop cart for transportation to the reassembly line.

The result of this operation by the new tinning machine is a thorough tinning of the edges and a smooth front free of rough solder that simplifies later spray painting of the meter. There is also less waste of flux and solder compared with manual methods.

[See also, "Drycleaning Machine Combats Meter Shop Problem in Conversion to Natural Gas" by George E. Griffin, superintendent, meter repair section, The Brooklyn Union Gas Company, American Gas Journal, August 1953, p. 14.]

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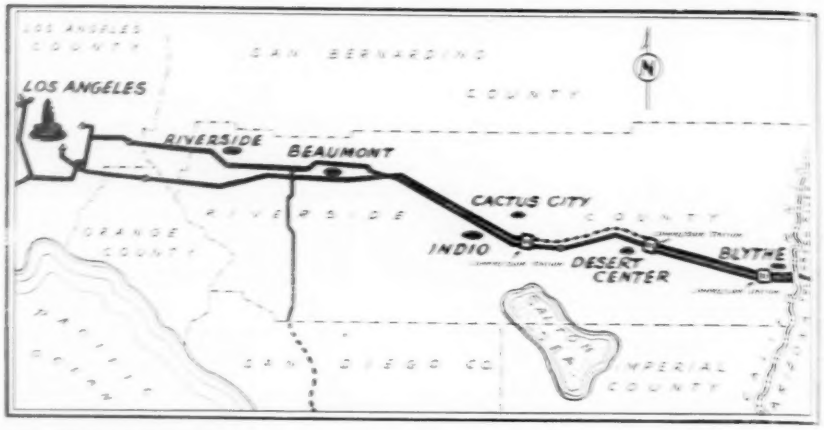


WHERE IT GOES — Last link in complete looping of Texas-California pipe line extends from the Cactus City booster station to the Desert Center booster station, 31.5 miles across desert flats and rugged hills.

210-Mile Southern California Gas Line Loop Completed; Now a Twin 30-In. Artery

WITH completion of a final loop line well ahead of schedule, the California section of the Southern California Gas Company — Southern Counties Gas Company's big-inch Texas-to-California gas pipe line is now a double-barrelled 30-in. artery bringing natural gas from mid-continent sources to Southern California markets.

Work on the final 31.5-mile loop section was completed, tested and tied in at a cost of approximately $2,500,000.

The new loop covers the rugged terrain between Cactus City and Desert Center in the Mojave Desert north of the Salton Sea, and finishes the looping of the 210-mile California portion of the original Texas-California line.

The loop lines constitute a completely new 30-in. line parallel to the original line, and enable the companies to increase capacity, and at the same time provide a substantially greater amount of "line pack" storage of gas to meet peak day requirements.

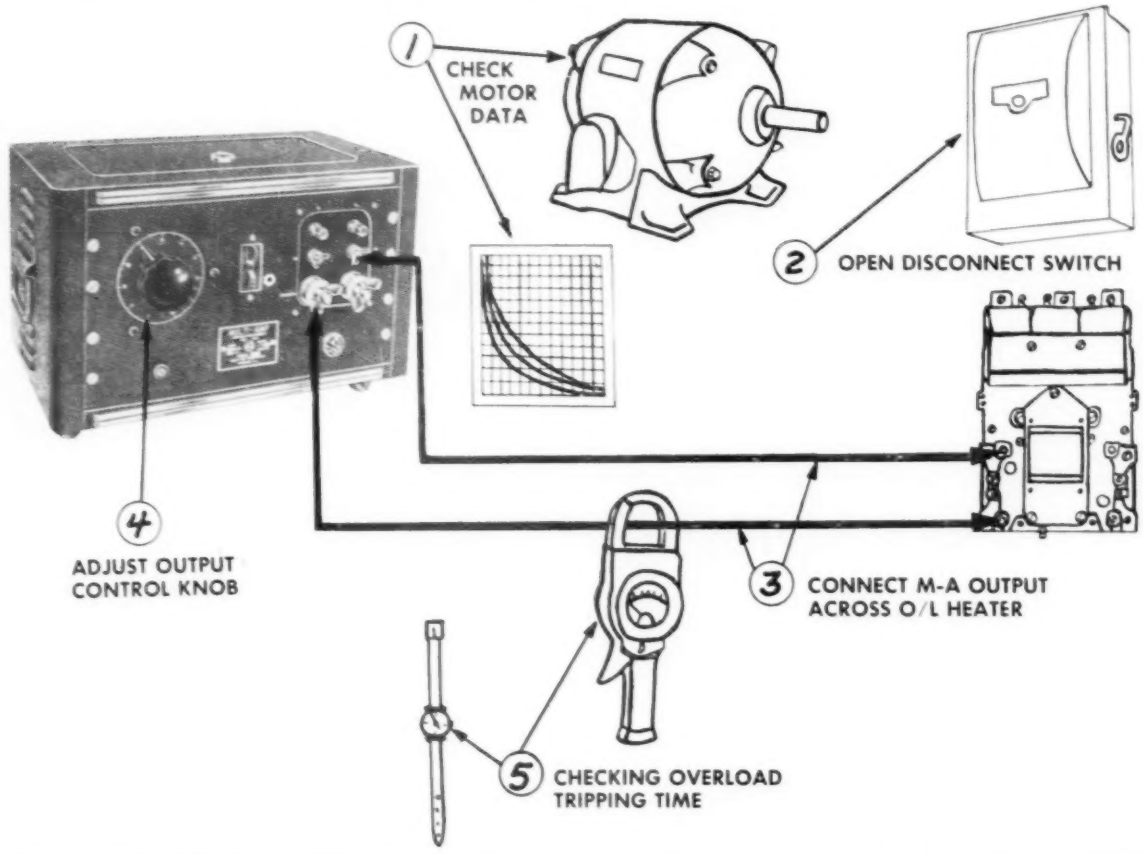
Since November, 1953, when a 73-mile loop was added to the pipe line, this 31.5-mile section was the only remaining gap in the looping operation. Work on this final phase of the project started in early September. The 62-ft joints of 30-in. pipe was asphalt enamel coated and single wrapped with 15-lb asbestos felt in Los Angeles, and shipped by truck to the desolate Mojave Desert location. Deliveries were made in a volume sufficient to construct about 7.5 miles per week.

A considerable amount of field bending was required to conform to the irregular contours of the desert terrain.

The original Texas-California pipe line was begun shortly after World War II as a joint venture of Southern California and Southern Counties Gas Companies, and was placed in operation in 1947. Since that time, facilities have been continuously expanded in a program that has seen the initial investment of nearly $100,000,000 grow to more than $500,000,000.

Deliveries of gas through the line are now more than five times those of the original line, providing about 65 per cent of the primary gas supply for the two gas companies.

★ ★ ★



HOW DEVICE IS USED in testing and calibrating motor starter overload relays.

Lone Star Gas Adopts New Testing Technique For Electrical Equipment

TEST UNIT of type used by Lone Star Gas Company.

IT IS AN OFTEN NEGLECTED FACT THAT protective devices can be as unpredictable as the equipment they protect and as susceptible to malfunction as anything else on line. Realizing this, the electrical department of Lone Star Gas Company, has organized a planned program of inspection based on a new "Multi-Amp" technique for the comprehensive checking of motor starter overload relays and circuit breakers.

Theoretically, current actuated protective devices will give consistent trip time results after they have been installed in strict accordance with tables furnished for this purpose. The fallacy in this theory is in the differences between electrical loading capacities, varying line characteristics, and undetermined ambient conditions, coupled with the fact that tables are formulated from averages.

Since a particular application may swing wide of the recommendations on the table of 'averages', it is apparent that relays and breakers must be cali-

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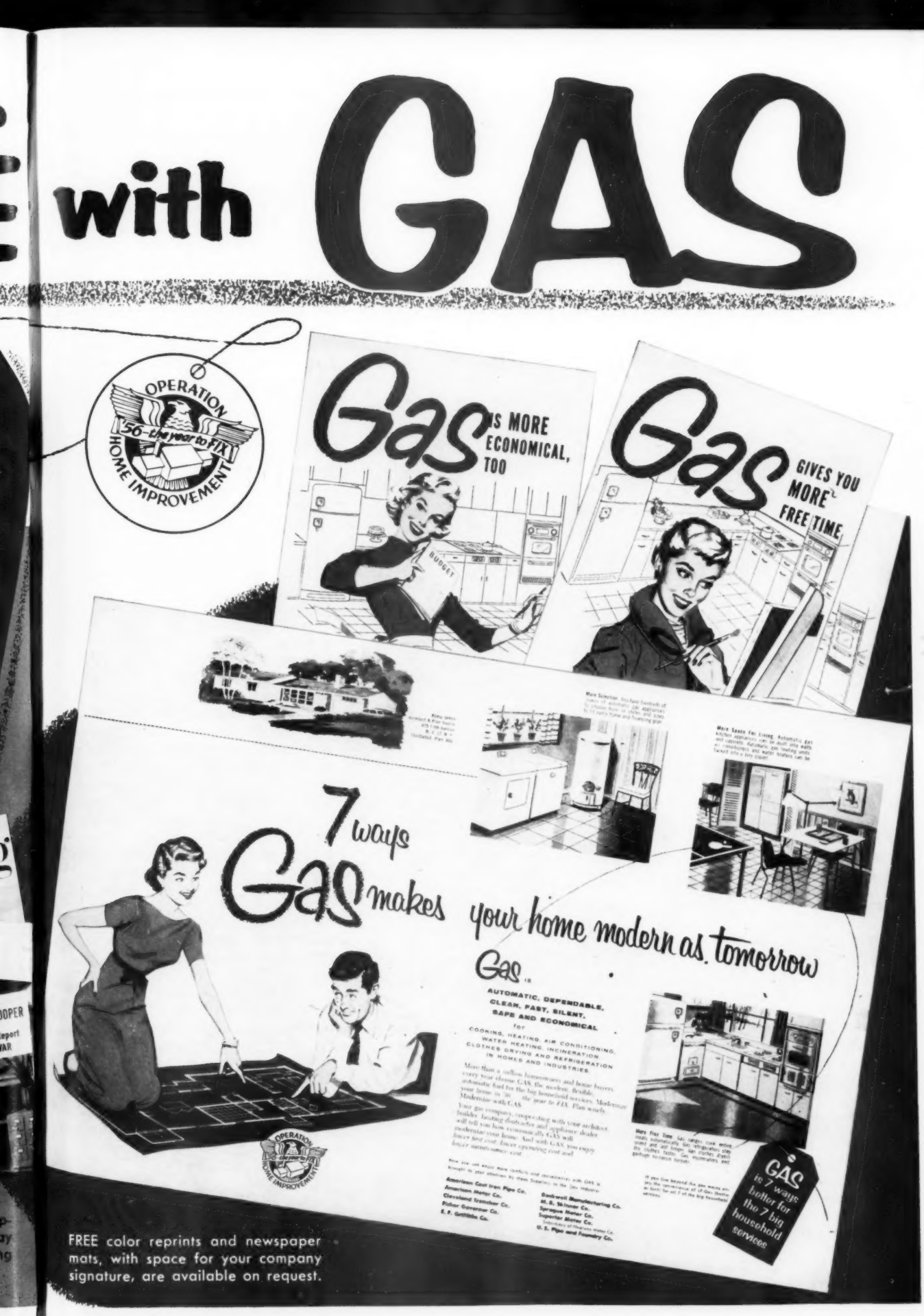
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HIGH CURRENT PORTABLE TEST UNIT (with integral timer and ammeter) is used to test, for recalibration, motor starter overload relays and circuit breakers in typical automatic equipment control board.

brated *in line* where all factors are in play, in order to guarantee the quality of performance.

Time, too, can drastically alter trip time performance, for whether the protective device is in dead storage or in line, fatigue stress, mechanical wear, the intrusion of foreign matter, or atmospheric corrosion can reduce its response to a dangerous low.

Nothing short of preliminary testing and periodic working checks can with any certainty, assure a maintenance department that equipment vital to essential operation is receiving the protection that should be implicit in relays and breakers. An appalling 20 per cent of all industrial fires are attributable to electrical disturbances, a fact that further strengthened Lone Star's resolution to apply the new preventive maintenance technique made available through the development of a portable high current testing instrument.

Lone Star uses the new device on a regular basis to arrive at proper settings for both thermal and magnetic type motor starter overload relays and to periodically check their operation after installation. At fixed intervals, relays and breakers are tested again and recalibrated, or repaired if they have wandered from the desired settings.

Since these devices are widely dispersed at Lone Star, the portable feature of the device is very convenient. The instrument can be wheeled to the working area and readied for operation by plugging into any nearby electrical outlet. Leads off its variable auto-transformer are affixed to the unit undergoing test, and adjustable high currents are produced in stepless increments to energize the relay or breaker. Results are tabulated by means of ammeter, timer, plus thermameter in the case of thermal devices.

A Kardex record system for keeping accurate test records, developed in collaboration with Remington Rand, Inc., is supplied to chart the performance history of each device and to serve as an automatic reminder of the next testing due date.

Motor and transformed burnouts as well as disrupted operating schedules resulting from electrical failures traceable to misoperating current-actuated protective devices are no longer a problem. * * *

Gas Industry to Play Vital Role in Atomic Age

In the foreseeable future, atomic energy will supplement but not supplant gas, oil and coal, American Gas Association recently forecast. Latest available scientific and engineering information indicates that the so-called "conventional" fuels (gas, oil, and coal) will play a vital role in America's expanding economy for many years to come.

AGA's new booklet, "Gas and the Atom," answers 18 commonly asked questions to dispel some of the myth, mystery and misunderstanding that has risen on the subject of atomic energy. The booklet reveals, for example, that two independent groups of scientists anticipate a 50 per cent increase in total U. S. energy needs during the next 20 years. Atomic energy will help to supply this increased demand for fuel. "Gas and the Atom" visualizes the atom as a partner that will help gas, oil, and coal to meet these tremendous energy requirements.

The booklet also reveals that radioisotopes, a by-product of atomic energy production, are already proving useful to both the gas and oil industries. Isotopes are being used by geologists to help find new supplies of gas and oil and to detect and eliminate flaws in pipe lines.

Natural gas has many highly specialized uses in homes and industry that atomic energy could not displace, "Gas and the Atom" reports. In only one field would atomic energy appear to offer competition with natural gas — as a fuel to power electric generating stations. The most optimistic estimates give atomic fuel about one-fourth of all generation of electricity by 1975.

Copies of "Gas and the Atom" are being offered to local gas companies for distribution to schools, employees, stockholders, financial institutions, civic organizations and other interested groups. Single copies are available without charge from the Public Information Bureau, American Gas Association, 420 Lexington Ave., New York 17, New York. Prices for orders in quantity are as follows: 2 to 999 copies, 7¢ each; 1000 to 9999, 6¢ each; 10,000 copies or more, 5¢ each. All orders are FOB, New York City.

1955 Index

The editorial index of all articles published in **The American Gas Journal** during 1955 is now available. Subscribers wishing to receive a free copy should write on company letterhead to AGJ, P. O. Box 1589, Dallas 21, Texas.

CALENDAR OF THE GAS INDUSTRY

April 1956

13-14 Florida-Georgia Gas Association general management conference, Lakeside Inn, Mount Dora, Florida.

14-15 SGA conference on use of electronic computers by engineering personnel, Hilton Hotel, El Paso, Texas.

16-18 National Conference of Electric and Gas Utility Accountants, Hotels Biltmore and Commodore, New York.

17 AGA committee on domestic gas research, Hotel Statler, Washington, D. C.

17-18 AGA domestic advertising committee, The Greenbrier, White Sulphur Springs, West Virginia.

17-19 AGA sales conference on industrial and commercial gas, Hotel Roanoke, Roanoke, Virginia.

17-19 Southwestern Gas Measurement Short Course, University of Oklahoma, Norman, Oklahoma.

18-20 MidWest LP-Gas Service School, Iowa State College, Ames, Iowa.

19-20 Indiana Gas Association, French Lick Springs Hotel, French Lick, Indiana.

19-21 GAMA annual meeting, The Greenbrier, White Sulphur Springs, West Virginia.

23-25 SGA convention, Dallas, Texas.

23-25 AGA Mid-West regional gas sales conference, Edgewater Beach Hotel, Chicago.

24-25 PCGA gas supply and transmission, technical section, Thunderbird, Las Vegas, Nevada.

25 AGA subcommittee on marketing research, Edgewater Beach Hotel, Chicago, Illinois.

26 AGA board of directors, Dallas, Texas.

27 SGA round-table conference on supervisory training, Selwyn Hotel, Charlotte, North Carolina.

30-May 2 Chamber of Commerce of the United States, annual meeting, Washington.

MAY 1956

1- 2 PCGA residential sales, sales and advertising section, Gas Company Auditorium, Pasadena, California.

3 NEGA operating division meeting, Sheraton Biltmore Hotel, Providence, Rhode Island.

6-9 LPGA convention and trade show, Conrad Hilton Hotel, Chicago.

7- 8 AGA residential gas section, eastern gas sales conference, Park-Sheraton Hotel, New York City.

7- 9 Air Conditioning and Refrigeration Institute, The Homestead, Hot Springs, Virginia.

7-10 AGA distribution, motor vehicles and corrosion conference, Congress Hotel, Chicago.

7-11 National Restaurant Association convention and exposition, Navy Pier, Chicago (AGA exhibit).

7-11 AGA commercial gas school, Edgewater Beach Hotel, Chicago.

7-11 Natural Gas & Petroleum Association of Canada, General Brock Hotel, Niagara Falls, Ontario.

9-11 American Welding Society Show, Memorial Auditorium, Buffalo, New York.

9 PUAA annual gas forum, Philadelphia, Pennsylvania.

10-11 AGA gas supply, transmission and storage conference, Conrad Hilton Hotel, Chicago.

11-12 PUAA annual convention, Philadelphia, Pennsylvania.

15-18 Heating, Piping, Air Conditioning Contractors National Association, Kentucky Hotel, Louisville, Kentucky.

16 NEGA appliance servicing conference, Bancroft Hotel, Worcester, Massachusetts.

16-18 AGA chemical engineering and manufactured gas production conference, Benjamin Franklin Hotel, Philadelphia.

17-18 AGA industrial and commercial gas section, managing committee, Pocono Manor Inn, Pocono Manor, Pennsylvania.

18-19 Southeastern Gas Association, officers, directors, and committees, Hotel Ft. Sumter, Charleston, South Carolina.

22 PCGA commercial and industrial sales, sales and advertising section, Claremont Hotel, Berkeley, California.

22-24 Pennsylvania Gas Association, Pocono Manor Inn, Pocono Manor, Pennsylvania.

FLAME Editor Receives Industrial Editing Award

M. L. Bruchhauser, editor of Northern Illinois Gas Company's employee publication, FLAME, recently received the 1956 "Distinguished Service Editorial Award" presented by the Industrial Editors Association, Chicago.

Bruchhauser, a 27-year utility veteran, has been in the house publication field the past 15 years, and has been editor of FLAME since its inception in 1954.

TRANSGAS Wins Journalism Award

One of the highest awards in industrial journalism has been won by TRANSGAS, official publication of Transcontinental Gas Pipe Line Corporation. A panel of judges has selected TRANSGAS for the Award of Excellence in the Second Annual Traffic Safety Awards program, sponsored by the American Association of Industrial Editors. The award was won by a series of traffic safety articles in TRANSGAS during 1955.

TRANSGAS is edited by George Bohot, of Transco's publications department. Director of the department is Ken B. Harper. Artwork for the magazine is done by Houston commercial artist Bill Shields.

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News

TGT to Increase Common Stock

Holders of Tennessee Gas Transmission Company common stock in a special meeting at company headquarters voted to increase the firm's authorized common stock from 15,000,000 to a new total of 30,000,000 shares and to create a new class of 1,000,000 shares of second preferred stock.

The company on January 30 filed a registration statement with the Securities and Exchange Commission covering an offering of part of the new preferred stock, 400,000 shares of cumulative convertible second preferred stock, par value $100 per share.

Columbia Gas Declares Dividend and Policy Change

A regular quarterly dividend of 22½ cents a share has been declared by the Board of Directors on the common stock of The Columbia Gas System, Inc. The dividend was payable February 15, 1956 to stockholders of record January 20, 1956.

This continues the Corporation's annual dividend at the 90 cent rate which has been paid for the last several years, but changes the policy of paying three quarterly dividends of 20 cents a share and a final dividend for the year of 30 cents a share.

General Gas to Expand Underground Storage

General Gas Corporation, one of the nation's largest distributors of LP-Gas, has announced plans to nearly double its underground storage facilities near Gibsland, Louisiana.

The company will increase its underground storage from 12,000,000 to 20,000,000 gal of LP-Gas.

Consumers' Gas Buys Canadian Plant Facilities

The propane air plant and distribution facilities of the Ontario Shore Gas Company, which serves Oshawa, Whitby and Bowmanville, have been purchased by The Consumer's Gas Company of Toronto.

Conversion of the propane air system and customers' appliances to natural gas is planned by the fall of this year, with the natural gas being supplied by a pipe line from Toronto to the Oshawa, Ajax, Whitby, Bowmanville areas. When conversion is completed, at Consumers' Gas Company expense, the more than 1100 customers of Shore Gas will have the benefits of Consumers' system-wide rates now in effect in Metropolitan Toronto, Brampton and Streetsville.

Operation of the utility will be from offices in each of the communities.